

Biomagnification Activity- Mercury in the System

Objective: *Students will be able to visualize how toxins enter and accumulate in a food chain. This will help students understand that even “small” amounts can end up in larger quantities within the Apex predator of a food chain.*

Materials:

Gold paper clips represent *Mercury*

Green paper clips represent *phytoplankton*

Blue paper clips represent something that eats Phytoplankton - *zooplankton*

Purple paper clips eat the Blue organism (zooplankton) - *bigger organism (small fish)*

Pink paper clips eat the Purple - *large predatory fish or Seabird*

Procedures: (For each roll- no more than 4)

1: Draw the food chain represented by the organisms listed above

2: Roll a die - this tells you how much mercury your single phytoplankton eats.

Ex. roll a 2 (phytoplankton will have 2 gold paperclips on it)

3: Roll die again, this is how many phytoplankton your zooplankton eat

Ex. roll a 3 (you will have to make 2 MORE phytoplankton paperclips with 2 gold mercury reps on EACH one)

4: Roll die, this is how many ZOOPLANKTON your little fish (PURPLE) eat

Ex. roll a 3 (you will have to make 2 MORE zooplankton (BLUE) which each have the green and gold)

5: Roll die, this is how many LITTLE FISH, your Large Fish/Bird (Pink) eats

Ex. roll a 5 (you have to make 4 MORE Purple organisms (with the same number of Blue, Green, and Gold)

6: After you have completed all levels of the food chain, place your data into a data table and graph how much mercury was found at EACH trophic level.

Conclusion:

What did you learn about biomagnification by doing this activity? Explain.